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Regents College Examination Content Guide

Production/Operations Management

General Description of the Examination

The Regents College Examination in Production/Operations Management measures knowledge and understanding of material typically taught in a one-semester course in production/operations management at the undergraduate level. The examination corresponds to an introductory course required of business majors. The content is drawn from that commonly included in courses with such titles as Production/Operations Management, Operations Management, Production Management, Management of Operations, Production and Operations, and Production and Inventory Management. A knowledge of generally accepted production/operations management principles, principles of economics, statistics, and basic computer concepts is assumed. The examination tests for a knowledge of facts and terminology, an understanding of basic concepts, and the ability to apply this knowledge and understanding to typical production/operations decision-making problems.

When You're Ready, We're Here For You.

**REGENTS
COLLEGE
EXAMINATIONS**

Use this guide if you are planning to test no later than September 30, 2001.

If you are planning to test on or after October 1, 2001, you should also obtain the revised version of this guide which will be available in late summer 2001. You may access the revised version online at our Web site or request a printed copy by contacting the College.

Use of Calculators

You will not be permitted to use a calculator in answering questions on this examination. Any necessary tables (for example, statistical distributions, present values) will be provided with the examination.

Uses for the Examination

Regents College, the test developer, recommends granting three (3) semester hours of lower-level undergraduate credit to students who receive a score equivalent to a letter grade of C or higher on this examination. This recommendation is endorsed by the American Council on Education. In the Regents College business programs, this examination meets a core requirement and is not awarded advanced-level status. In the Regents College liberal arts program, this examination can be applied as an upper-level elective. Other

colleges and universities also recognize this examination as a basis for granting credit or advanced standing. Individual institutions set their own policies for the amount of credit awarded and the minimum acceptable score. Before taking the examination, you should check with the institution from which you wish to receive credit to determine whether credit will be granted and/or to find out the minimum grade required for credit.

Examination Length and Scoring

The examination consists of approximately 130 four-option multiple-choice questions, some of which are unscored, experimental questions. You will have three (3) hours to complete the examination. Since you will not be able to tell which questions

are experimental, you should do your best on all of them. Letter grade recommendations are based on expected performance of college students of comparable ability on the group of questions administered. Your score will be reported as a letter grade.

Examination Administration

The examination is administered by computer at Sylvan Technology Centers® throughout the United States and in Canada, American Samoa, Guam, Puerto Rico, Saipan (Northern Mariana Islands), and the Virgin Islands. The examination is also administered at approved international testing centers. To receive information concerning testing dates, locations, and fees, contact Regents College.

Test Administration
Regents College
7 Columbia Circle
Albany, New York 12203-5159

Phone: (518) 464-8500
Toll Free: 888-RCEXams (888-723-9267)
Fax: (518) 464-8777
Internet: testadm@regents.edu
TDD: (518) 464-8501

Computer-Delivered Testing

If you are testing at a Sylvan Technology Center®, your examination will be delivered by computer. You will enter your answers on the computer using either the keyboard or the mouse.

The system used for our computer-delivered testing is designed to be as user-friendly as possible, even for those with little or no computer experience. Instructions provided on-screen are similar to those you would receive in a paper examination booklet. In addition, before the timed portion of your examination begins, you may choose to complete a tutorial that orients you to the

computer testing environment and gives you the opportunity to try each feature before using it in questions that will be scored. You will be instructed in how to use the mouse, the keyboard, and different parts of the screen. We encourage you to take advantage of this tutorial. If you have access to the World Wide Web, you can view the screens that you will see in the tutorial, or actually download a copy of a similar tutorial to practice with, from the Regents College Web site (www.regents.edu).

Third-Party Services

Regents College is a nonprofit educational service organization, and has no affiliation with, nor does it endorse or recommend, any profit-making education counseling centers. Initial counseling and advising for college degrees is usually provided **FREE** by degree-

granting institutions. Students wishing to demonstrate college-level learning by taking Regents College Examinations can receive their **FREE** copies of the appropriate content guides by requesting them from Regents College.

Content Outline

The major content areas on the examination and the percent of the examination devoted to each content area are listed below.

CONTENT AREA	PERCENT OF THE EXAMINATION
I. Definition and Description of Production/Operations Management	5%
II. Design of the Productive System	30%
III. Planning the Use of the Productive System	40%
IV. Control of the Productive System	25%
Total	100%

I. Definition and Description of Production/Operations Management (5%)

- A. Scope, purpose, and characteristics of systems designed to produce goods and/or deliver services
- B. Manufacturing and service strategy
- C. Relationship of the production/operations function to other functions
- D. Organizational structure for the production/operations function
- E. Production of goods and services – distinctions and commonalities
- F. Management of people, materials, technology, and information

II. Design of the Productive System (30%)

- A. Product and service design
 - 1. Product life cycle
 - 2. Product development process
 - 3. Concepts of waiting line (no mathematical computations required)
- B. Production processes
 - 1. Purpose of production processes
 - 2. Conceptual understanding of different processes
 - 3. Appropriateness, advantages, and disadvantages of different types
- C. Facility capacity planning
 - 1. Purpose
 - 2. Conceptual understanding of different approaches
 - 3. Appropriateness, advantages, and disadvantages of different approaches
 - 4. Quantitative application of breakeven analysis, decision trees, and decision tables

D. Facility location

1. Purpose
2. Conceptual understanding of different approaches
3. Appropriateness, advantages, and disadvantages of different approaches
4. Quantitative applications of transportation model and factor rating

E. Facility layout

1. Purpose
2. Conceptual understanding of pure and hybrid types
3. Appropriateness, advantages, and disadvantages of different types
4. Quantitative application of assembly line balancing and process layout design

F. Design of work systems

1. Purpose
2. Conceptual understanding of job design, work methods, work measurement, learning curves, and incentive plans
3. Appropriateness, advantages, and disadvantages of different concepts
4. Quantitative applications of work sampling, time standards, learning curves, and incentive plans

G. Computer integrated manufacturing

1. Purpose
2. Conceptual understanding of different technologies: computer-aided design (CAD), robotics, flexible manufacturing, computer-aided manufacturing (CAM)

III. Planning the Use of the Productive System (40%)

A. Forecasting

1. Purpose
2. Conceptual understanding of different models: moving averages, exponential smoothing (first order), seasonality and trend techniques, linear regression analysis, and qualitative (i.e., judgmental or subjective) techniques
3. Appropriateness, advantages, and disadvantages of different models
4. Quantitative applications of the above models

B. Aggregate planning

1. Purpose
2. Conceptual understanding of different approaches
3. Appropriateness, advantages, and disadvantages of different approaches
4. Quantitative applications of the trial and error method (i.e., cut-and-try, cut-and-paste)

C. Material requirements planning (MRP)

1. Purpose
2. Conceptual understanding of MRP and MRP II systems
3. Appropriateness, advantages, and disadvantages of this approach
4. Quantitative application of MRP

D. Operations scheduling

1. Purpose
2. Conceptual understanding of different approaches and evaluation criteria (priority rules, Johnson's two-operations rule, and assignment method)
3. Appropriateness, advantages, and disadvantages of approaches
4. Quantitative applications of the above approaches

E. Project management

1. Purpose
2. Conceptual understanding of different methods: Gantt-Milestone charts, project evaluation and review technique (PERT)/critical path method (CPM)
3. Appropriateness, advantages, and disadvantages of different methods
4. Quantitative applications of the above methods

IV. Control of the Productive System (25%)

A. Inventory management

1. Purpose
2. Conceptual understanding of different models: basic economic order quantity (EOQ) models (instantaneous and noninstantaneous replenishment), reorder point models, price break (quantity discount) model, fixed interval ordering model, ABC method, and single-period order quantity model
3. Appropriateness, advantages, and disadvantages of the methods
4. Quantitative applications of the above models excluding fixed interval

B. Purchasing and materials management

1. Purpose
2. Conceptual understanding of different practices
3. Appropriateness, advantages, and disadvantages of the methods

C. Just-in-time production

1. Purpose
2. Conceptual understanding of this approach
3. Appropriateness, advantages, and disadvantages of this approach

D. Quality management

1. Purpose
2. Conceptual understanding of different approaches
3. Appropriateness, advantages, and disadvantages of different approaches
4. Quantitative applications of acceptance sampling and control charts

Sample Questions

The questions that follow illustrate those typically found on this examination. These sample questions are included to familiarize you with the type of questions you will find on the examination. The answers can be found on the inside back cover of this guide.

1. Which is an example of a service organization that provides both goods and services?
 - 1) manufacturer of packaged goods
 - 2) bank with 24-hour automatic teller machines
 - 3) fire department
 - 4) restaurant
2. Which statement best characterizes the effect of facility location decisions?
 - 1) They do not have a profound effect on a firm's competitive advantage.
 - 2) They only affect distribution costs.
 - 3) They have no effect on the management of operations at lower levels of the organization.
 - 4) They effectively position each element of the production-distribution system with respect to the overall system.
3. What is a critical path?
 - 1) the shortest path through a network
 - 2) the longest path through a network
 - 3) the path with the most slack time
 - 4) the path with the highest probability of delay
4. Which is a true statement regarding exponential smoothing?
 - 1) It requires the storage of enormous amounts of data.
 - 2) It allows weighting patterns to be altered.
 - 3) It is suitable for data that include long-term upward movements.
 - 4) It is suitable for data that show seasonal fluctuations.
5. A product's demand for the last six periods was 100, 110, 125, 140, 120, and 130, respectively. What is the forecasted value for the seventh period using a 3-period moving average?
 - 1) 127.5 units
 - 2) 130.0 units
 - 3) 135.0 units
 - 4) 140.0 units
6. Which is an important element of total quality control?
 - 1) the use of control charts to monitor all aspects of the control process
 - 2) the inspection of every part produced
 - 3) the involvement of all personnel in maintaining quality
 - 4) the determination of an acceptable number of defectives for all lots
7. The annual demand for an item is 10,000 units. If annual holding costs are \$10 per unit and order costs are \$20 per order, what is the best order quantity?
 - 1) 100 units
 - 2) 150 units
 - 3) 200 units
 - 4) 300 units

Study Materials

The study materials listed below are recommended by the examination development committee as the most appropriate textbooks to help you study for the examination.

The Regents College Bookstore stocks the current editions of selected textbooks for all examinations. In some cases, current editions will be more recent than those listed in this guide. The Bookstore also offers resources in areas such as study strategies, personal planning, and stress reduction. See the separate flyer for further information about purchasing textbooks or other resources through the Bookstore.

You may also find textbooks in college libraries or schools of business. Public libraries may have some of the textbooks or may be able to obtain them through an interlibrary loan program.

You should allow sufficient time to obtain resources and to study before taking the examination.

Electronic Peer Network

Enrolled Regents College students are eligible to join the Regents College Electronic Peer Network (EPN). The EPN is a Web-based environment that enables Regents College students to interact academically and socially. As an EPN member, you will be able to locate a study partner, join an online study group for your exam, chat in real-time with other students, and access other resources that may be helpful to students preparing for Regents College Examinations. Enrolled students can join the EPN by visiting the Regents College home page and clicking on Electronic Peer Network.

Online Study Services

Regents College online study services provide enrolled and prospective students with access to subject matter experts. These services are available on a fee-for-service basis and currently assist students with writing and statistics. Please email requests for more information about these services to the appropriate address: rcwrite@regents.edu or rcstats@regents.edu or call Learning Services at 888-647-2388 (press 1-4-4 at the greeting). You may email suggestions for new online study services to rlearn@regents.edu.

Virtual Library

The Regents College Virtual Library (RCVL) is an online library designed for distance learners. The RCVL (<http://www.library.regents.edu>) provides access to a variety of resources such as journal articles, books, Web sites, databases, and reference services. These resources can help you prepare for Regents College Examinations. While some library services are restricted to enrolled students, many are not. To access the RCVL, visit the Regents College home page.

Recommended Resources

Textbooks

Chase, R. (1998). *Production and operations management: Manufacturing and services* (8th ed.). Homewood, IL: Richard D. Irwin.

Stevenson, W.J. (1996). *Production/Operations management* (5th ed.). Homewood, IL: Richard D. Irwin.

Evans, J., Anderson, D., Sweeney, D., & Williams, T. (1996). *Production/operations management: Quality, performance, and value* (5th ed.). St. Paul, MN: West.

Table

A copy of the normal distribution table as shown on page 7 of this content guide will be provided for your use during the examination. The table is taken from Stevenson's *Production/Operations management*. You may not bring this copy of the table, or any other study materials, into the examination.

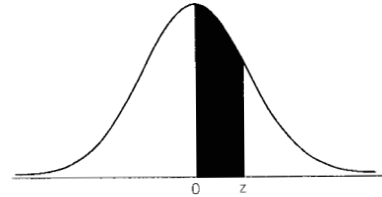
Standard Abbreviations

A copy of the following glossary will be provided for your use during the examination:

AOQ	average outgoing quality	LIFO	last-in, first-out
AOQL	average outgoing quality limit	LTPD	lot tolerance percent defective
AQL	acceptable quality level	MAD	mean absolute deviation
BOM	bill of materials	MPS	master production schedule
CAD	computer-aided design	MRP	material requirements planning
CAM	computer-aided manufacturing	MRP II	manufacturing resource planning
CPM	critical path method	MSE	mean squared error
CRP	capacity requirements planning	NC	numerically controlled
RAFT	computerized relative allocation of facilities technique	OC	operating characteristic
EOQ	economic order quantity	OPT	optimized production technology
FCFS	first-come, first-served	OSHA	Occupational Safety and Health Administration
FIFO	first-in, first-out	PERT	project evaluation and review technique
FMS	flexible manufacturing system	RSFE	running (cumulative) sum of forecast errors
JIT	just-in-time	S/O	slack per operation
LCL	lower control limit	SPT	shortest processing time
		UCL	upper control limit

TABLE A

**Areas under the
Normal Curve,
0 to z**



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2703	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990

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Notes

Regents College Examination Development Committee in Production/Operations Management

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Key To Sample Questions

Question	Key	Question	Key
1	4	5	2
2	4	6	3
3	2	7	3
4	2		

Regents College Written Examinations

The following is a list of examinations scheduled to be offered during 2000–2001:

Arts and Sciences Examinations

Foundations of Gerontology
Pathophysiology
Psychology of Adulthood & Aging

Arts and Sciences Guided Learning Packages

Abnormal Psychology
American Dream
Anatomy & Physiology
English Composition
Ethics: Theory & Practice
History of Nazi Germany
Life Span Developmental Psychology
Microbiology
Religions of the World
Research Methods in Psychology
Statistics
World Population

Business Examinations

Business Policy & Strategy
Human Resource Management
Labor Relations
Organizational Behavior
Production/Operations Management

Education Examination

Reading Instruction in the Elementary School

Nursing Examinations

Associate Degree:
Differences in Nursing Care: Area A (*modified*)
Differences in Nursing Care: Area B
Differences in Nursing Care: Area C
Fundamentals of Nursing
Maternal & Child Nursing (*associate*)
Maternity Nursing
Nursing Concepts 1
Nursing Concepts 2
Nursing Concepts 3
Occupational Strategies in Nursing

Nursing Examinations

Baccalaureate Degree:
Adult Nursing
Health Restoration: Area I
Health Restoration: Area II
Health Support A: Health Promotion & Health Protection
Health Support B:
Community Health Nursing
Maternal & Child Nursing (*baccalaureate*)
Professional Strategies in Nursing
Psychiatric/Mental Health Nursing

Nursing Guided

Learning Package
Baccalaureate Degree:
Research in Nursing

To receive information concerning testing dates, locations, and fees, contact Regents College:

Test Administration
Regents College
7 Columbia Circle
Albany, New York 12203-5159
Phone: (518) 464-8500
Toll Free: 1-888-RCEXAMS
Internet: testadmn@regents.edu
TDD: (518) 464-8501

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THE REGENTS COLLEGE EXAMINATIONS OFFICIAL STUDY GUIDE — 2001 EDITION IS HERE!

Want more study information than this content guide provides? Consider the advantages of this one-volume source for all undergraduate-level Regents College Examinations:

- Learn why the correct answer to that sample question is the right one, and what's wrong with the others, in the Rationales section;
- View guides for related topics in logical groupings, and select your next exam based on comprehensive information;
- Tie your studies together into a plan for earning your Regents College degree;
- Use the free CD-ROM to access documents, the Sylvan tutorials and sample tests, Web links, and a slide show about Regents College.

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